Scarcity and the Safe Drinking Water Act: When Could an Aquifer Serve as a Source of Drinking Water?

Jeremy Brown March 5, 2013

The local Farm Bureau chapter and other Goliad County interests recently petitioned the Fifth Circuit to review an EPA action that would exempt a portion of the Goliad Aquifer from certain provisions of the Safe Drinking Water Act ("SDWA").

The exemption would allow a Corpus Christi company, Uranium Energy Corp., to mine uranium near the town of Anders by pumping oxygenated water into the sandstone aquifer and capturing ore.

In December, the EPA granted a request by the Texas Commission on Environmental Quality to designate a portion of the Goliad Aquifer as an "exempted aquifer" under the SDWA. The petitioners have alleged that the agency action is arbitrary and capricious and that, for unspecified reasons, it contravenes the SDWA.

The act requires the EPA to "protect as underground sources of drinking water, all aquifers and parts of aquifers which meet the definition of 'underground sources of drinking water'" unless an aquifer qualifies for an exemption.

In 40 C.F.R. 146.4, the EPA has defined an exempted aquifer as one that "does not currently serve as a source of drinking water" and "cannot now and will not in the future serve as a source of drinking water because" it satisfies at least one of five conditions.

The portion of the Goliad Aquifer at issue was exempted because it fit the condition set forth in Section 146.4(b)(1): "It is mineral, hydrocarbon or geothermal energy producing, or can be demonstrated by a permit applicant as part of a permit application for a Class II or Class III operation to contain minerals or hydrocarbons that considering their quantity and location are expected to be commercially producible."

Other conditions allow an aquifer to be exempted if "it is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical" or if the aquifer "is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption."

These SDWA exemption regulations are anchored in assumptions that may not be correct. For starters, they assume that minerals, hydrocarbons and geothermal resources should be valued above water – a reasonable view, based on historical commodity prices, but one that might not hold up if there is any truth to the talk about "blue gold."

Similarly, the regulations assume that, because recovery of water for drinking purposes is currently "economically or technologically impractical," it will always be so. But water planners across the country are now resorting to strategies that would have once been thought impractical.

In Texas, the most recent State Water Plan calls for desalination plants that, historically, would have been pipe dreams. Wichita Falls is building a water treatment facility that would be the first in the country to deliver water from toilet to tap, without an intermediate aquifer filtration process.

ProPublica recently reported that Mexico City plans to tap a newly discovered mile-deep aquifer. The same story quotes an EPA hydrogeologist: "Around the world people are increasingly doing things that 50 years ago nobody would have said they'd do.

To some extent, the SDWA exemptions are unavoidable – protecting all aquifers would require severely limiting many mining, exploration and waste disposal activities. And the SDWA does delegate a certain amount of authority to states and allows for varying water conditions to be considered at the state level. (An aquifer may be deemed unable to serve as a future source of drinking water, for instance, because it is "more than 3,000 and less than 10,000 mg/l." An arid state that prizes water would presumably choose thresholds near the top of that range; wetter states would likely aim lower.)

Still, with much of the country coping with drought and preparing for a future of water scarcity, certain aspects of the SDWA may be outdated. It may be that mining activities should no longer be presumptively deemed more important than water that does not immediately present a positive value proposition.

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